

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 - 26 (Cancelled)

27. (Currently Amended) ~~At least one solder bump having been created over the surface of a semiconductor structure~~ substrate, comprising:

- at least one contact pad having been provided on the surface of said substrate;
- a layer of passivation ~~having been deposited over the surface of said substrate, said~~ layer of passivation having been ~~patterned and etched creating~~ at least one opening ~~through said layer of passivation that aligns with said at least one contact pad created on the surface of said substrate, exposing the surface of said at least one contact pad, said layer of passivation having an exposed surface;~~
- at least one ~~patterned and etched~~ layer of seed material deposited over ~~the surface of~~ said layer of passivation, including the ~~exposed a~~ surface of said at least one ~~on~~ contact pad, said at least one layer of seed material being aligned with said at least one contact pad;
- at least one ~~patterned and etched~~ layer of Under Bump Metal (UBM) created over the surface of said layer of seed material, said least one layer of UBM being aligned with said at least one layer of seed material;
- at least one layer of solder material having a solder height provided over the surface of said at least one layer of UBM, ~~said least one layer of solder being aligned with said at least one layer of UBM;~~
- a layer of polyimide polymer coated over the ~~exposed surface of the layer of~~ passivation to a ~~polymer polyimide~~ thickness, said ~~polymer polyimide~~ thickness being less than said solder height by a measurable amount, said polymer contacting said layer of solder material over a substantial portion of the thickness of the polymer layer;
- said solder protruding from the surface of said layer of ~~polymer polyimide~~ by said measurable amount, said protrusion forming a protruding layer of solder;

said protruding layer of solder having been reflowed, thereby having created a solder ball;

wherein a height of said solder ball is dependent upon the thickness of said polymer layer.

28. (Currently Amended) The semiconductor structure at least one solder bump of claim 27, said at least one contact pad comprising aluminum or an aluminum alloy.

29. (Currently Amended) The semiconductor structure at least one solder bump of claim 27, said at least one layer of Under Bump Metal (UBM) comprising a layer of nickel, created to a thickness between about 1 and 10 μm .

30. (Currently Amended) The semiconductor structure at least one solder bump of claim 27, said at least one layer of Under Bump Metal (UBM) comprising a layer of chrome, followed by a layer of copper, followed by a layer of gold, created to a thickness between about 1 and 10 μm .

31. (Currently Amended) The semiconductor structure at least one solder bump of claim 27, said at least one layer of Under Bump Metal (UBM) comprising multiple layers of metal.

32. (Currently Amended) The semiconductor structure at least one solder bump of claim 27, with additionally at least one layer of metal having been created by electroplating said at least one layer of UBM.

33. (New) The semiconductor structure of claim 27, wherein the layer of polymer comprises a polyimide.

34. (New) A semiconductor structure comprising:
a semiconductor substrate having at least one contact pad;
a passivation layer provided on a surface of the substrate, the passivation layer having at least one opening to expose at least a portion of the contact pad;
a seed layer provided over a portion of the passivation layer and the exposed portion of the contact pad;
an Under Bump Metal (UBM) layer provided over the seed layer;
at least one layer of solder material provided over the UBM layer, the solder material having a height;

a polymer layer provided over the passivation layer; the polymer layer having a thickness less than said solder height; said polymer contacting said layer of solder material over a substantial portion of the thickness of the polymer layer;

said solder protruding from a top surface of said polymer layer by an amount sufficient to enable formation of a solder ball when said solder material is subjected to heat sufficient to reflow said solder material;

wherein the solder ball diameter is a function of the thickness of the polymer layer such that controlling the thickness of the polymer layer controls the diameter of the solder ball.

35. (New) The semiconductor structure of claim 34, wherein etching the polymer layer to a desired thickness prior to forming the solder ball controls the ball diameter.

36. (New) The semiconductor structure of claim 35, wherein the solder ball has a height, and wherein etching the polymer layer to a desired thickness prior to forming the solder ball controls the ball height.

37. (New) The semiconductor structure of claim 34, wherein the polymer layer comprises a polyimide.

38. (New) The semiconductor structure of claim 34, wherein said contact pad comprises aluminum or an aluminum alloy.

39. (New) The semiconductor structure of claim 34, wherein said UBM layer comprises nickel having a thickness between about 1 and 10 μm .

40. (New) The semiconductor structure of claim 34, wherein said UBM layer comprises multiple layers of metal.

41. (New) The semiconductor structure of claim 34, wherein said UBM layer comprises a layer of chrome, followed by a layer of copper, followed by a layer of gold, having a total thickness between about 1 and 10 μm .